

REMARKS

The Office Action dated July 29, 2008, has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

By this Response, claims 1-7 were amended to more particularly point out and distinctly claim the subject matter of the present invention. Claims 12-14 were added. No new matter has been added. Support for the above amendments is provided in the Specification at least on page 10, line 21, to page 15, line 10. Claims 8-11 were withdrawn from consideration in the Response dated March 21, 2008, in response to the Restriction Requirement dated February 22, 2008. Accordingly, claims 1-7 and 12-14 are currently pending in the application, of which claims 1-2 are independent claims.

In view of the above amendments and the following remarks, Applicants respectfully request reconsideration and timely withdrawal of the pending objections to the Information Disclosure Statement and the pending rejections to the claims for the reasons discussed below.

Information Disclosure Statement

The Office Action indicated that references AF, AG, AH, AI, AJ, AK, AM, AN, and AW cited in the Information Disclosure Statement (IDS) filed on November 22, 2005, were not considered because an English translation was not provided for any of the

aforementioned references. Furthermore, the Office Action indicated that reference AW is missing page 476.

Accordingly, Applicant submit herewith this Response an Information Disclosure Statement including an English translation or concise explanation of the reference, *e.g.*, an English translation of the Abstract, for each of the aforementioned references on the Information Disclosure Statement filed on November 22, 2005.

Claim Rejections under 35 U.S.C. §112, Second Paragraph

The Office Action rejected claims 1-7 under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Office Action alleged that claims 1-7 recite a method of crossing flowering parts based on their pigment genotypes but fail to provide any method steps for the claimed method.

Accordingly, Applicants have amended claims 1-7 to include method steps to more particularly point out and distinctly claim the subject matter of the present invention, rendering the rejection of claims 1-7 under 35 U.S.C. §112, second paragraph, moot.

Therefore, Applicants respectfully request withdrawal of the rejections of claims 1-7 under 35 U.S.C. §112, second paragraph, and submit that claims 1-2, and the claims that depend therefrom, are now in condition for allowance.

Claim Rejections under 35 U.S.C. §102(a)

The Office Action rejected claims 1, 3-4, and 6-7 under 35 U.S.C. §102(a) as allegedly anticipated by Uddin, *et al.* (“Mode of Inheritance and Allele Expression of Three Major Anthocyanidins in *Eustoma grandiflorum* Cultivars”) (“Uddin”). The Office Action alleged that Uddin discloses or suggests each and every element recited in claims 1, 3-4, and 6-7. Applicants respectfully traverse these rejections for at least the following reasons.

Applicants respectfully submit that Uddin is not a proper reference to reject claims 1, 3-4 and 6-7 under 35 U.S.C. §102(a) because Uddin does not antedate Applicants’ priority date of May 22, 2003. A claim of priority to Japanese patent application, JP2003-144406, was filed on November 22, 2005. Applicants submit herewith a certified English translation of the foreign priority document and a statement that the translation of the certified copy is accurate, perfecting Applicants’ claim of priority. Accordingly, the rejections of claims 1, 3-4 and 6-7 under 35 U.S.C. §102(a) is rendered moot.

Accordingly, the Office Action has failed to establish a *prima facie* case of anticipation to reject claims 1, 3-4 and 6-7 under 35 U.S.C. §102(a) based on the teachings of Uddin.

Therefore, Applicants respectfully request withdrawal of the rejections of claims 1, 3-4, and 6-7 under 35 U.S.C. §102(a) and respectfully submit that claim 1, and the claims that depend therefrom, are in condition for allowance.

Claim Rejections under 35 U.S.C. §103(a)

The Office Action rejected claims 1-7 under 35 U.S.C. §103(a) as being allegedly unpatentable over Oud, *et al.* (“Breeding of Transgenic Orange *Petunia hybrida* Varieties”) (“Oud”) in view of van Raamsdonk (“Flower Pigment Composition in Tulipa”) (“van Raamsdonk”), and further in view of Griesbach (“The Inheritance of Flower Color in *Petunia hybrida* Vilm”). Applicants respectfully submit that the claims recite subject matter that is neither disclosed nor suggested in the combination of Oud, Raamsdonk, and Griesbach.

Claim 1, upon which claims 3-4, 6-7, and 13-14 depend, recites a method. The method includes introducing a genotype $H^X H^X \cdot Pg/pg \cdot Cy/cy \cdot Dp/dp$ in a flavonoid biosynthesis for crossing flowering plants to create a new flower color. The genotype $H^X H^X \cdot Pg/pg \cdot Cy/cy \cdot Dp/dp$ is an inheritance of flower pigments, pelargonidin (Pgn), cyanidin (Cyn), and delphinidin (Dpn), for a flower color expression. Five multiple alleles, H^T , H^F , H^D , H^Z , and H^O , participate in a hydroxylation of a B-ring of a flavonoid biosynthesis precursor participating in the flavonoid biosynthesis of the pelargonidin (Pgn), the cyanidin (Cyn), and the delphinidin (Dpn).

Claim 2, upon which claims 5 and 12 depend, recites a method. The method includes introducing a genotype $D/d \cdot E/e \cdot H^X H^X \cdot Pg/pg \cdot Cy/cy \cdot Dp/dp$ in a flavonoid biosynthesis for crossing flowering plants to create a new flower color. The genotype $D/d \cdot E/e \cdot H^X H^X \cdot Pg/pg \cdot Cy/cy \cdot Dp/dp$ is an inheritance of flower pigments, pelargonidin

(Pgn), cyanidin (Cyn), and delphinidin (Dpn), for a flower color expression, and an inheritance of a double flower type or a marginal variegation type. Five multiple alleles, H^T , H^F , H^D , H^Z , and H^O , participate in a hydroxylation of a B-ring of a flavonoid biosynthesis precursor participating in the flavonoid biosynthesis of the pelargonidin (Pgn), the cyanidin (Cyn), and the delphinidin (Dpn).

As will be discussed below, the combination of Oud, Raamsdonk, and Griesbach would fail to disclose or suggest each and every element recited in claims 1-7, and therefore fails to provide the features of the claims discussed above.

Oud is directed to breeding of transgenic orange *Pentunia hybrida* varieties. Oud relates to the contribution of flower color to the total ornamental value of a flower. Oud describes how the combination of biochemical knowledge and genetic engineering technology has resulted in the addition of a new color to the existing color range of *Petunia hybrida* (Oud, Abstract).

Raamsdonk is directed to a flower pigment composition in *Tulipa*. Raamsdonk analyzed flower pigment compositions of 43 accessions of *Tulipa* species, 6 species hybrids, and 494 tulip cultivars with respect to the amount of carotenoids, and the anthocyanidins, pelargonidin, cyanidin, and delphinidin (Raamsdonk, Abstract).

Griesbach is directed to the inheritance of flower color in *Petunia hybrida* vilm. Griesbach focuses on the inheritance of specific flower colors in *Petunia hybrida* through the combined inheritance of anthocyanin pigmentation and pH (Griesbach, Abstract).

The Office Action alleged that Oud discloses each and every element recited in claims 1-7 with the exception of the flavonoid biosynthesis having a route formula (I), as originally recited in dependent claim 3 (See Office Action on page 7). The Office Action cited Raamsdonk to allegedly cure the deficiencies of Oud.

Assuming *arguendo* that the teachings of Oud could be combined with the teachings of Raamsdonk and the teachings of Griesbach, the combination of Oud, Raamsdonk, and Griesbach would fail to disclose or suggest, at least, “wherein five multiple alleles, H^T, H^F, H^D, H^Z, and H^O, participate in a hydroxylation of a B-ring of a flavonoid biosynthesis precursor participating in the flavonoid biosynthesis of the pelargonidin (Pgn), the cyanidin (Cyn), and the delphinidin (Dpn),” as recited in proposed claims 1 and 2 (emphasis added).

Contrary to the Office Action’s allegations, Raamsdonk fails to disclose or suggest the aforementioned claim features. Rather, as illustrated in Figure 1, Raamsdonk describes a biosynthetic pathway of anthocyanidins. The basic flavonoid skeleton is synthesized by chalcone synthase gene *chs*. Hydroxylation of the 3’ and 5’ locations in dihydrokaempferol, resulting in the synthesis of other precursors. In a *Petunia*, the enzyme flavonoid 3’-hydroxylase HT produces hydroquercetin, while flavonoid 3’,5’-hydroxylase HF hydroxylates both location in the B-ring of dihydrokaempferol to dihydromyricetin. The enzyme dihydroflavonol 4-reductase DFR is involved in the synthesis of three pigments pelargonidin, cyanidin, and delphinidin with one, two, or three hydroxyl groups at the B-ring, respectively. The specific activity of DFR in these

three pathways differs. The resulting color depends on the existence of flavonols as co-pigments, on patterns of glycosylation, and on physical circumstances. As further illustrated in Figure 1, the biosynthetic pathway of anthocyanidins only includes the alleles, *Ht*, and *Hf*.

Hence, Raamsdonk fails to disclose or suggest that “five multiple alleles, H^T , H^F , H^D , H^Z , and H^O , participate in a hydroxylation of a B-ring of a flavonoid biosynthesis precursor participating in the flavonoid biosynthesis of the pelargonidin (Pgn), the cyanidin (Cyn), and the delphinidin (Dpn),” as recited in claims 1 and 2 (emphasis added).

Griesbach fails to cure the deficiencies of Oud and Raamsdonk. Accordingly, the combination of Oud, Raamsdonk, and Griesbach would fail to disclose or suggest each and every element recited in claims 1-2.

Claims 3-4 and 6-7 depend from claim 1. Claim 5 depends from claim 2. Accordingly, claims 3-7 should be allowable for at least their dependency upon an allowable base claim, and for the specific limitations recited therein.

Therefore, Applicants respectfully request withdrawal of the rejections of claims 1-7 under 35 U.S.C. §103(a) and respectfully submit that claims 1-2, and the claims that depend therefrom, are now in condition for allowance.

CONCLUSION

In conclusion, Applicants respectfully submit that the Office Action failed to establish a *prima facie* case of anticipation to reject claims 1, 3-4 and 6-7 under 35 U.S.C. §102(a) based on the teachings of Uddin. Furthermore, Applicants respectfully submit that Oud, Raamsdonk, and Griesbach, whether taken individually or in combination, would fail to disclose or suggest each and every element recited in claims 1-7 and 12-14. The distinctions previously noted are more than sufficient to render the claimed invention non-obvious. It is therefore respectfully requested that all of claims 1-7, and 12-14 be allowed, and this present application be passed to issuance.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, Applicants' undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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References (9)
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